

Developing and supporting the curriculum

Collaborative learning via the cloud-based BIM technology

1	Your higher education institution: Heriot-Watt University
2	Name author(s), and contact details: Dr Ibrahim Motawa
3	<p>How does your project contribute to a research-informed and professionally relevant curriculum?</p> <p>This project is mainly based on the up-to-date research on collaboration techniques and the technology of Building Information Modelling (BIM). The concept and the supported technologies provided by BIM are developed to allow more efficient practices and facilitate the multidisciplinary working in Built Environment projects. BIM technologies have changed the traditional collaboration practices among project teams from just sharing various forms of documents (e.g. written, audio, video) and/or facilitating communication via multimedia devices (e.g. interactive websites) to sharing the actual model of a project with all relevant information which allows all project teams to collaborate on the project model directly across all stages of projects life cycle (i.e. Design, construction, operation). The most recent development in BIM technologies, which are cloud-based, combines cloud and mobile technologies (e.g. tablets and smart phones) to facilitate remote collaboration in implementing design solutions to the ongoing problems within built environment projects. Embedding this concept in SBE curriculum will improve the collaborative skills of students and provide them with professional capabilities to work in teams using advanced technologies.</p>
4	<p>How does your project support an international and multi-disciplinary curriculum?</p> <p>The project has investigated the use of the new cloud-based BIM technologies to achieve certain learning outcomes of a developed BIM-driven curriculum (previously funded by HWU Enhancement Theme) considering multiple locations of learners. The project has actually a dual purpose as it has run between multi-disciplinary student teams in Edinburgh and Dubai Heriot-Watt's campuses.</p>
5	<p>How does your project support student-centred approaches that promote student engagement and leadership?</p> <p>Students' engagement was the key instrument of this project. The project has students' involvement from SBE Edinburgh and Dubai: 6 students from each campus. They have worked in teams with autonomy to achieve the project objectives, which reflects also the level of leadership they were given to run the project. The staff involvement was to facilitate the process and give guidance at key points.</p>

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6 **How does your project help to reshape the learning environment? Please refer (where relevant to):**

- **Technological mediation**

The project mainly used the cloud-based BIM technologies on tablets and mobile phones to facilitate the learning environment. Other supported communication technologies were used to facilitate meetings and presentations, such as: Skype, webinar software.

- **The distribution of learning across global locations**

The project was between SBE students in Edinburgh and Dubai. This required special arrangement to engage all students, observe how they conduct their tasks and assess their progress. This included the installation of certain software and subscription to the used technologies.